

# 雲南山毛櫸科補誌一

胡先驕

植物分類研究所

## ADDITIONAL NOTES ON THE FAGACEAE OF YUNNAN I.

By HSEN-HSU HU

Institute of Systematic Botany

### 短柄山毛櫸 *Fagus brevipetiolata* Hu, 新種

喬木高達十三公尺;小枝甚細瘦,圓柱形,有條紋,幾無毛,微紅褐色,被有多數微小長形皮孔。芽披針形,尖,長十二公厘,有多數覆瓦狀,卵形至卵形披針形發亮褐色無毛鱗片。葉皮紙質,卵圓矩圓形至卵圓披針形,頂端漸尖,基部不等幾圓形,邊緣有疏小鋸齒,微向外卷,上面亮綠色除沿中脈微有茸毛外幾無毛,下面木綠色微有茸毛,長八至十二公分,闊三至五公分;中脈在兩面俱凸起。側脈十四至十五對,互生,直伸入鋸齒,沿葉緣環結,成 $46^\circ$ 角。葉柄幾無毛,長一公分。總苞長至二·五公分,直徑開時三·五公分,有四裂瓣,密生鐵銹色茸毛,被有多數直立或微彎但不外彎有茸毛的刺毛;果梗長一·五至二·五公分,除近頂外無毛。堅果卵圓三角狀,長十五公厘,闊八公厘,光亮栗褐色,有絲狀毛,尤以近尖頂處為甚,基部疤痕三角形,內凹。

雲南東南部:麻栗坡,老君山,高一千五百至一千七百公尺處,生混合林中,喬木高四十英尺,常見;馮國楮 13815 號(模式標本),一九四七年十二月十三日。

此種與其他中國種相異之處,在其卵圓矩圓形至卵圓披針形之葉長八至十二公分,葉柄長一公分,與總苞被有多數細瘦直立或微彎但不外彎有茸毛的刺毛。

### *Fagus brevipetiolata* Hu, sp. nov.

Arbor ad 13 m. alta; ramuli gracillimi, teretes, striati, glabrescentes, rufescenti-brunnei, lenticellis numerosis minutis elongatis instructi. Gemmae lanceolatae, acutae, 12 mm. longae, perulis pluribus imbricatis ovatis ad ovato-lanceolatis nitidis brunneis glabris cinctae. Folia chartacea, ovato-oblonga ad ovato-lanceolata, apice acuminata, basi inaequalia subrotundata, margine remote serrulata leviter revoluta, supra nitida viridia, costa tomentulosa excepta glabrescentia, subtus obscure viridia, tomentulosa, 8-12 cm. longa, 3-5 cm. lata; costa media utrinque elevata, nervis lateralibus utrinsecus 14-15-jugis, alternatis, rectis in dentes inductis et ad marginem anastomosantibus, sub angulo  $45^\circ$  divergentibus; petioli glabrescentes, 1 cm. longi. Involucrum ad 2.5 cm.

longum, 3.5 cm. in diametro, 4-valvatum, dense ferrugineo-tomentosum, setis pluribus gracilibus tomentosis erectis vel curvatis sed non-recurvis obtectum; pedunculo 1.5-2.5 cm. longo, ad apicem exceptum glabro. Glans ovoideo-triangularis, 15 mm. longa, 8 mm. lata, nitide castaneo-brunnea, sericeo-pubescent, praecipue ad apicem apiculatum; cicatrice basilari triangulari, concava.

Southeastern Yunnan: Mar-li-po, Sze-tai-po, (Lao-chun-shan), alt. 1500-1700 m., in mixed forests, tree 40 ft., common, K. M. Feng no. 13815 (type), Dec. 13, 1947.

This species differs from others found in China in ovate-oblong to ovate-lanceolate leaves 8-12 cm. long with petioles 1 cm. long, and in involucre covered with many slender erect or curved but not recurved tomentose bristles.

### 黑錐栗 *Castanopsis remotidenticulata* Hu, 新種

常綠喬木高六公尺，樹幹直徑三十公分；小枝圓柱形，頗細瘦，有槽，紫黑色，微有毛，密生高起幾圓形白色小皮孔，葉革質，窄矩圓形至矩圓披針形，頂端長鑷狀尾狀漸尖，基部不等幾圓形，邊緣上部有疏遠小齒，下部全緣，上面亮綠色，下面淡綠色，幾無毛；長七至十一公分，闊二·五至三·二公分，中脈在兩面均凸起；側脈十二至十三對，互生或幾對生，在兩面皆凸起，近邊緣處微弓彎與環結，引入小齒，成  $45^\circ$  至  $60^\circ$  角，小脈在兩面皆可見；葉柄有槽，微有毛。穗狀果序長至七公分，果序梗頗粗壯，有槽，有皮孔，微有毛。總苞無柄，幾圓形，高一·五公分，直徑二公分，壁厚，被有粗壯分枝有茸毛長至七公厘之銳刺；幼堅果圓錐狀幾圓形，亮淺栗褐色，有絲狀毛，高七公厘，直徑一公分，基部疤痕大。

雲南東南部：文山縣，老君山，高一千八百至二千公尺處，生雜林木中，喬木高二十五英尺，直徑一英尺，常見，馮國楮 11140 號（模式標本），一九四七年八月十二日。

此種與他種不同處在其窄矩圓形至矩圓披針形之葉，上部有稀疏小齒，頂端鑷狀長尾狀漸尖。

### *Castanopsis remotidenticulata* Hu, sp. nov.

Arbor sempervirens ad 6 m. alta; trunco 30 cm. in diam.; ramuli teretes satis graciles, sulcati, sparse pilosi, lenticellis pluribus elevatis subrotundis albis instructi. Folia coriacea, anguste oblonga vel oblongo-lanceolata, apice longe falcato-caudato-acuminata, basi inaequaliter subrotundata, ad margine parte superiore remote denticulata, parte inferiore integra, supra nitide viridia, subtus pallide viridia, utrinque glabrescentia, 7-11 cm. longa, 2.5-3.2 cm. lata; costa media utrinque elevata; nervis lateralibus utrinsecus 12-13-jugis, alternatis vel suboppositis, utrinque elevatis, ad marginem camptodromis et anastomosantibus, per dentes productis, sub angulo  $45^\circ$ - $60^\circ$  divergentibus. Amenta fructifera ad 7 cm. longa, pedunculo rhachique satis validis, sulcatis, lenticellatis, sparse pilosa. Cupulae sessiles, subrotundatae, 1.5 cm. altae, 2 cm. in diam., muro crasso, aculae validae ramosae pungentes tomentosae instructo; fructus juveniles conico-subglobosi, nitide pallide castaneo-brunnei, sericei, 7 mm. alti, 1 cm. lati, cicatrice basilari satis magna.

Southeastern Yunnan: Wenshan Hsien, Laochun Shan, alt. 1000 m., in mixed forest, tree 25 ft. high, 30 cm. in diam., common, K. M. Feng, no. 11140 (type), Aug. 12th, 1940.

This species differs from others in its narrow oblong to oblong-lanceolate leaves remotely denticulate on the upper part and falcate-caudate-acuminate at apex.

**長穗錐栗 *Castanopsis macrostachya* Hu, 新種**

常綠小喬木，高至八公尺；小枝細瘦，圓柱形，有槽，密生黃色星狀茸毛；葉革質，倒卵短圓形至倒卵形，頂端漸尖，基部不等幾圓形，邊緣有刺毛狀鋸齒，上面亮綠色，幾無毛，下面淡綠色，有灰色細茸毛，長九至十三公分，闊四至五·五公分；中脈在上面凹陷，有星狀茸毛，在下面顯著凸起，有黃灰色星狀細茸毛；側脈十八至二十二對，互生至幾對生，在上面凹陷，在下面凸起，弓彎，引伸出齒成微向內彎刺毛，成  $60^\circ$  角，有星狀毛；葉柄頗粗壯，長五至七公分，有黃色星狀茸毛。大蕊柔荑花序頂生或腋生，花序柄與花序軸細瘦，有黃色星狀茸毛，長至二十四公分。總苞無柄，有黃色茸毛；大蕊花單生，有三個開張花柱。成熟果未見。

雲南東南部：麻栗坡，高一千公尺處，小喬木高八公尺，常見，王啓無 86647 號（模式標本），一九四〇年二月三日。

此種與他種不同處在其葉柄極短，及其細長達二十四公分的大蕊花序。

***Castanopsis macrostachya* Hu, sp. nov.**

Arbor sempervirens, ad 8 m. alta; ramuli graciles, teretes, sulcati, dense fulvo-stellato-tomentosi. Folia coriacea, obovato-oblonga vel obovata, apice acuminata, basi inaequaliter subrotundata, margine grosse setoso-serrata, supra nitide viridia, glabrescentia, subtus pallide viridia, cinereo-tomentella, 9-13 cm. longa, 4-5.5 cm. lata; costa media supra impressa, stellato-tomentellata, subtus prominente elevata, fulvo-cinereo-stellato-tomentellata; nervis lateralibus utrinsecus 18-22-jugis, alternatis vel suboppositis, supra impressis, sub angulo  $60^\circ$  divergentibus, stellato-tomentellatis; petioli satis validi, 5-7 mm. longi, fulvo-cinereo-stellato-tomentosi. Amenta pistillata terminalia et axillaria, pedunculo rhachique gracilibus, fulvo-stellato-tomentosis, ad 24 cm. longis. Cupulae sessiles, fulvo-tomentosae; flores pistillati solitares; stylis 3 divergentibus. Fructus ignotus.

Southeastern Yunnan: Marlipo, Barbu, alt. 1000 m., on open slope, tree 8 m. high, frequent; C. W. Wang, no. 86647 (type), Feb. 1940.

This species differs from others in its very short petiole and in its slender pistillate inflorescence to 24 cm. long.

**劍川石栗 *Lithocarpus chienchuanensis* Hu, 新種**

常綠喬木高至十五公尺，樹幹直徑二十五公分；小枝多角狀，有槽，有黃褐色星狀茸毛。葉革質，橢圓形，卵圓橢圓形至披針形，頂端長尾狀漸尖，基部楔形，全緣微外卷，上面亮綠色，無毛，下面微有毛，長九至二十三公分，闊三至七·五公分；中脈在兩面均凸起；側脈九至十一對，相距頗遠，在邊緣弓彎而環結，成  $60^\circ$  角；葉柄強，長一·五至二·五公分，無毛。幼小蕊柔荑花序頂生與腋生，有茸毛，長五公分。穗狀果序長三·五公分，果序梗長一·五公分，微有毛，皂斗無柄，淺杯狀，包括約榲果的一半，連合成羣高二至三·二公厘，直徑七公厘；苞片密覆瓦狀排列，先端尖，有茸毛。幼榲果扁球形，頂端微有尖，與皂斗連合，豆綠褐色，高三公厘，闊五公厘。

雲南北部：劍川縣，喬后井，羅平山，雜木林內，喬木高十尺，常見；秦仁昌 23055 號（模式標本）一九四〇年六月三十日。龍陵縣，高一千三百公尺處，雜木林內，喬木高十五公尺，榲果高直徑二十五公分，王啓無，張英伯，劉瑛 89901 號，一九四一年八月。

此種與他種不同處，在其長尾狀葉與極小的榲果只在基部與其帶扁形的皂斗相連。

**Lithocarpus chienchuanensis** Hu, sp. nov.

Arbor sempervirens, ad 15 m. alta, trunco 25 cm. in diametro; ramuli angulares, canaliculati, fusco-stellato-tomentosi. Folia coriacea, elliptica, ovato-elliptica vel lanceolata, apice longe caudato-acuminata, basi cuneata, margine integra et leviter revoluta, supra nitido-viridia, glabra, subtus sparsim pilosa, 9-23 cm. longa, 3-7.5 cm. lata; costa media utrinque elevata; nervis lateralibus utrinsecus 9-11-jugis, distantibus, ad marginem camptodromis et anastomosantibus, sub angulo  $60^\circ$  divergentibus; petioli validi, 1.5-2.5 cm. longi, satis glabri. Amenta staminata juvenilia axillaria et terminalia, tomentosa, 5 cm. longa. Spica fructifera 3.5 cm. longa, pedunculo 1.5 cm. longo, sparsim piloso. Cupula sessilis, humiliter cupularis, ad dimidium glandis amplexans, in fasciculos 2-3.2 mm. altos 7 mm. in diametro coalescens, squamis confertim imbricatis, apice acutis tomentosis. Glans juvenilis, depresso-globosa, apice leviter apiculata, cupulam coalescens, olivaceo-brunnea, 3 mm. alta, 5 mm. in diametro.

Northern Yunnan: Chienchuan Hsien, Chiaohochin, Loping Shan, in mixed woods, small tree 3 m. high, frequent, *R. C. Ching* no. 23055 (type), June 30, 1940.

Lungling, alt. 1300 m., in mixed woods, tree 15 m. high, 25 cm. in diam., *Wang Chang and Liu* no. 89901, Aug. 1941.

This species differs from others in the long caudate leaves and in the very small nuts coalescent with the flattish cupules only at base.

**緬寧石栗 *Lithocarpus mianningensis* Hu, 新種**

常綠喬木高五至八公尺，小枝粗壯，多角狀，有槽，有黃褐色茸毛，最後幾無毛；葉革質，橢圓形至倒卵形橢圓形，先端尾狀漸尖，基部尖或下延，全緣向外微卷，上面深綠色，下面有細茸毛，長九至十二公分，闊四至五·五公分，中脈在兩面均凸起；側脈十二至十四對，上面下陷，下面凸起，互生或幾對生，向邊緣弓彎而環結，成  $45^\circ$  角，小脈不顯著但可見；葉柄上面有槽，長十五至二十公厘。穗狀果序長至十一公分，果序梗與果序軸均粗壯；果二三個連合成叢，無柄。皂斗淺，包圍榧果基部而與之連合，被有密生覆瓦狀排列闊三角形漸尖有灰色茸毛苞片，榧果短圓亞球形，頂端微凹而有突起，光亮栗褐色，直徑二·三公分，外果皮厚，內部不完全分為數室。

雲南南部：緬寧縣，大折箐，高二千五百公尺處，在森林中，喬木，高五至八公尺，常見；俞德浚 17805 號（模式標本），一九三八年九月三十日。

此種與其他種不同處，在其大短圓亞球形榧果，僅在基部與其淺皂斗相連合。

**Lithocarpus mianningensis** Hu, sp. nov.

Arbor sempervirens, 5-8 m. alta; ramuli robusti, angulares, canaliculati, fusco-tomentosi, demum glabrescentes. Folia coriacea, elliptica ad obovato-elliptica, apice acuminata, basi acuta et decurrentia, margine integra et leviter revoluta, supra intense viridia, subtus tomentellata, 9-12 cm. longa, 4-5.5 cm. lata; costa media utrinque elevata, nervis lateralibus utrinsecus 12-14-jugis, supra impressis, subtus elevatis, alternatis vel suboppositis, propter marginem arcuatis et anastomosantibus, sub angulo  $45^\circ$  divergentibus; nervulis utrinque obscuris sed conspicuis; petioli supra canaliculati, 15-20 mm. longi. Spica fructifera ad 11 cm. longa, pedunculo rhachique validis, fructibus 2-3 in fasciculum connatis, sessilibus. Cupula humilis, basin glandis amplexans et eam coalescens, squamis

confertim imbricatis, late triangularibus, acuminatis, cinereo-tomentosis. Glandes oblongo-subglobosae, apice depressae et umbonatae, nitide castaneo-brunneae, 2.3 cm. in diametro, exocarpio crasso, intus in cellas nonnullas imperfecte divisae.

Southern Yunnan: Mianning Hsien, Tacheching, alt. 2500 m., among forest, tree 5-8 m. high, common, *T. T. Yü no. 17805* (type), Sept. 30, 1938.

This species differs from others in the large oblong-subglobose nuts coalescent only at base with the shallow cupules.

### 順寧石栗 *Lithocarpus shunningensis* Hu, 新種

常綠喬木高至十公尺；小枝粗壯，圓柱形，有槽，灰褐色，有灰色茸毛，皮孔多數，小，高起，圓形。葉革質，卵圓披針形至披針形，先端尾狀漸尖，基部楔形至亞圓形，全緣向外微卷，中脈上面有茸毛，其餘處有散生毛，下面有灰色細茸毛，長七·五至十三公分，闊一·八至三·五公分；中脈在上面扁平或微凹，下面凸起；側脈十二至十三對，互生至幾對生，直或彎曲在邊緣環結；成  $45^{\circ}$ — $60^{\circ}$  角；葉柄頗壯，有灰色茸毛，長七至十二公分。穗狀果序短，長約五公分，果序梗與果序軸均甚壯，有茸毛。皂斗無柄，三個簇生，連合，直徑二公分連苞片在內，與榲果連合，除頂端外，幾全部包圍之，壁厚，木質，厚約三公厘；苞片覆瓦狀排列，矩圓形，頂端伸長為一軟刺長至七公厘，有灰色茸毛。榲果幾球形，頂端有突起，直徑一公分，草黃色，幾無毛。

雲南南部：順寧縣，烏木龍，高二千三百公尺處，在森林中，樹高十公尺，常見，俞德浚 16614 號（模式標本），一九三八年，七月九日；鎮康縣，雪山，高二千八百公尺處，在森林中，喬木八至十二公尺，常見，俞德浚 17073 號，一九三八年七月二十八日。

此種與他種不同處在其皂斗有多數覆瓦狀排列短圓形鱗片，頂端伸長為一軟刺長至七公厘。

### *Lithocarpus shunningensis* Hu, sp. nov.

Arbor sempervirens, 10 m. alta; ramuli robusti, teretes, striati, griseolo-brunnei, griseolo-tomentosi, lenticellis pluribus, parvis, elevatis, rotundatis instructi. Folia coriacea, ovato-lanceolata ad lanceolata, apice caudato-acuminata, basi cuneata ad subrotundata, margine integra et leviter revoluta, supra costa media tomentosa, ceterum dispersim pilosa, subtus griseolo-tomentellata, 7.5-13 cm. longa, 1.8-3.5 cm. lata; costa media supra complanata vel impressa, subtus elevata, nervis lateralibus utrinsecus 12-13-jugis, alternatis vel suboppositis, rectis vel arcuatis, ad marginem anastomosantibus, sub angulo  $45^{\circ}$ — $60^{\circ}$  divergentibus; petioli satis validi, cinereo-tomentosi, 7-12 mm. longi. Spica fructifera brevis, circiter 5 cm. longa, pedunculo rhachique validis, tomentosi. Cupulae sessiles, plerumque 3 in fasciculum constructae, coalescentes, 2 cm. in diametro, squamis glandem coalescentibus et apicem exceptem glandem fere omnino amplectentibus, muro crasso, ligneo, circiter 3 mm. crasso, squamis imbricatis, oblongis, apice in spinam mollem longe productis, ad 2 mm. longis, cinereo-tomentosis. Glans subglobosa, apice umbonata, circiter 1 cm. in diametro, straminea, glabrescens.

Southern Yunnan: Shunning, Wumulong, alt. 2300 m., among forests, tree 10 m. high, common, *T. T. Yü no. 16614* (type), July 9, 1938; Chengkang, Snow range, alt. 2800 m., among forest, tree 8-12 m., common, *T. T. Yü no. 17073*, July 28, 1938.

This species differs from others in the cupules with numerous imbricate oblong scales long produced at apex into a soft spine to 7 mm. long.

### 煥巖石栗 *Lithocarpus Woon-youngi* Hu, 新種

喬木；小枝圓柱狀，有槽，有細茸毛雜以長毛，黃褐色。芽卵狀，先端鈍，鱗片覆瓦狀排列，鈍頭，有細茸毛，邊緣有纖毛。葉革質，倒卵形橢圓形，先端尾狀漸尖，基部楔形，全緣微外卷，上面深綠色，無毛，有白霜，下面有稀疏星狀細茸毛，長九至十公分，闊三·五至四公分；中脉上面凹陷，下面凸起；側脉九至十對，在邊緣處弓彎與環結，成  $60^\circ$  角；葉柄上面有槽，長六至八公厘，穗狀果序長十三公分，果序梗與果序軸極強壯，有細茸毛。皂斗三個連生成簇，厚，無柄，包圍榧果三分之一，鱗片覆瓦狀排列，闊三角形，尖頭，有密生星狀茸毛，皂斗直徑至二公分。榧果圓錐狀亞球形，先端有突起，栗褐色，無毛，以闊而微凹疤痕附着皂斗上，高十七公分，直徑十八公分，尖端甚厚，木質，內部分為五不完全室。

雲南西部：雲龍縣，漕澗，知本山，高二千八百公尺處，生密雜木林中，王啓無 89746 號（模式標本）一九四二年二月一日。

此種與他種不同者在其三角狀亞球形的榧果有極厚木質皂斗，僅與榧果的基部相連。

### *Lithocarpus Woon-youngii* Hu, sp. nov.

Arbor; ramuli teretes, canaliculati, tomentelli, cum pilis dispersis longis, fusco-brunnei. Gemmae ovoideae, obtusae, perulis imbricatis obtusis tomentellatis ciliatis instructae. Folia coriacea, obovato-elliptica, apice caudato-acuminata, basi cuneata, margine integra et leviter revoluta, supra intense viridia glabra glauca, subtus sparsim stellato-tomentellata, 9-10 cm. longa, 3.5-4 cm. lata; costa media supra impressa, subtus prominente; nervis lateralibus utrinsecus 9-10-jugis, ad marginem camptodromis et anastomosantibus, sub angulo  $60^\circ$  divergentibus; petioli supra canaliculati, 6-8 mm. longi. Spica fructifera 13 cm. longa, pedunculo rhachique validissimis, tomentellatis. Cupulae in fasciculum 3 connatae, crassae, sessiles, partem  $1/3$  glandis amplexantes, squamis confertim imbricatis, late triangularibus, acutis, dense stellato-tomentosis, ad 2 cm. in diametro. Glans trigono-subglobosa, apice umbonata, castaneo-brunnea, glaber, cupulam adnata cum cicatricem latam leviter concavam, ad 17 mm. alta, 18 mm. in diametro, muro crassissimo et ligneo, intus in cellas 5 imperfecte divisa.

Western Yunnan: Yunglung Hsien, Tsogan, Chipeng Shan, alt. 2800 m., in dense mixed woods, C. W. Wang no. 89746 (type), Feb. 1, 1942.

This species differs from others in the broadly trigonous-globose nut with very thick woody cupule, coalescent to the nut only at its base.

### 啓無柯 *Pasania Chiwui* Hu, 新種

常綠小喬木；小枝圓柱形，有極少毛，暗灰色，被有多數隆起微小白色圓形皮孔。葉革質，披針形至卵圓披針形，頂端長鈍鐮形尾狀漸尖，基部不等楔形至幾圓形，上部有圓齒微向外卷，上面亮綠色，無毛，下面有白霜，無毛，長七至十公分，闊二·五至三·五公分；中脉在兩面均凸起；側脉互生，十一至十六對，在兩面均微凸起，弓彎在邊緣環結；小脉不顯著；葉柄上面有槽，長一公分。穗狀果序長至五公分，果序軸有極少茸毛。皂斗單生或三個簇生，幾不連合，無柄，包圍榧果三分之一，壁薄，鱗片合成六橫列同心圈帶片，除在皂斗基部外，不易辨別，微有細茸毛，高九至十一公厘，直徑十一至十二公厘。榧果卵狀，先端有尖頭，光亮淺栗褐色，無毛，高十八公厘，闊十三公厘，基部疤痕小，凸出。

雲南東南部：硯山縣，高一千二百公尺處，在櫟林中，小喬木，高二公尺，王啓無 84092 號（模式標本），一九三九年十月一日。

此種與安南種 *Pasania longipedicellata* Hickel et A. Camus 相同處爲其皂斗的鱗片連合成六橫列平行帶片，不同處爲穗狀果序僅長五公分，卵狀櫟果下部三分之一爲無柄半球形皂斗所包。

### *Pasania Chiwui* Hu, sp. nov.

Arbor parva sempervirens; ramuli teretes, sparsissime pilosi, obscure cinerei, lenticellis numerosis minutis elevatis rotundatis albidis instructi. Folia coriacea, lanceolata ad oblanceolata, apice longe obtuse falcato-caudato-acuminata, basi inaequaliter cuneata ad subrotundata, parte superiore crenata et leviter revoluta, supra nitido-viridia et glabra, subtus glauca et glabra, 7-10 cm. longa, 2.5-3.5 cm. lata; costa media utrinque elevata; nervis lateralibus alternatis, utrinsecus 11-16-jugis, utrinque leviter elevatis, camptodromis et anstomosantibus in dentes ad marginem inductis; nervulis obscuris; petioli supra canaliculati, 1 cm. longi. Spica fructifera ad 5 cm. longa, rhachi sparsissime pilosa. Cupulae solitariae vel 3 in fasciculum constructae, vix connatae, sessiles, partem 1/3 glandis amplexantes, muro tenui, squamis in lamellas 6 horizontales concentricas coalescentibus, basi cupulae excepta vix conspicuis, sparsim tomentellatis, 9-11 mm. altae, 11-12 mm. in diametro. Glandes ovoideae, apice apiculatae, nitido-castaneo-brunneae, glabrae, 18 mm. altae, 13 mm. latae, cicatrice basilari parva, convexa.

Southeastern Yunnan: Yenshan Hsin, Lokoutain, alt. 1200 m., in oak woods, small tree 2 m. high, C. W. Wang no. 84092 (type), Oct. 1, 1939.

This species is related to the Indochinese species, *P. longipedicellata* Hickel et A. Camus in the bracts of the cupules coalescent into six parallel zones, differing in short fruiting spike only 5 cm. long and in ovoid nuts embraced at the lower 1/3 by the sessile semiglobose cupules.

### 白絲栗 *Pasania confertifolia* Hu, 新種

常綠喬木，高達十公尺；小枝細瘦，圓柱狀，有條紋，無毛。葉革質，披針形至矩圓披針形，頂端尾狀至鉤狀漸尖，基部闊楔形至幾相等幾圓形與下延，邊緣微作波狀至幾全緣，微向外卷，長五至十二公分，闊二至四公分，兩面同色，無毛；中脈兩面均凸起，側脈幾對生，至互生，十二至十六對，在邊緣處弓彎與環結，在上面細而可見，在下面凸起，成 70° 至 80° 角，小脈成密網狀；葉柄扁平，長八至二十公厘。穗狀果序長至五公分，果序軸頗壯，帶白色，幾無毛。皂斗每三個連合，淺杯狀，包圍櫟果六分之一，苞片多數，緊貼，覆瓦狀排列，闊三角形，有灰色茸毛；皂斗高五公分，直徑十五公分；櫟果卵狀，頂端有尖，無毛，光亮草黃色，高至十七公厘，直徑至十五公厘，基部疤痕頗深凹入，直徑至七公厘。

雲南東南部：麻栗坡，老君山，高一千六百至二千公尺處，生雜木林中，喬木高十公尺，常見，馮國楹 13716 號（模式標本），一九四七年十一月九日；麻栗坡，潘家衝，高一千五百公尺處，路旁，喬木高十公尺，常見，馮國楹 12655 號，一九四七年十月三十一日；文山縣，老君山，高二千二百至二千四百公尺處，生雜木林中，喬木高十公尺，常見，馮國楹 11229 號，一九四七年八月十三日；同地，高二千三百至二千四百公尺處，生雜木林中，喬木高八公尺，馮國楹 11222 號，一九四七年八月十三日。

此種與他種不同處在其短圓形或披針形的葉多少聚集於小枝的頂端，與其淡草黃色卵狀至倒卵的嫩果具有小基部疤痕。

***Pasania confertifolia* Hu, sp. nov.**

Arbor sempervirens, 10 m. alta; ramuli graciles, teretes, striati, glabri. Folia coriacea, lanceolata ad oblongo-lanceolata, apice caudato- ad falcato-acuminata, basi late cuneata ad subaequaliter subrotundata et decurrentia, margine leviter undulata ad subintegra et leviter revoluta, 5-12 cm. longa, 2-4 cm. lata, utrique concoloria, glabra; costa media utrinque elevata, nervis lateralibus suboppositis vel alternatis, utrinsecus 12-16-jugis, praeter marginem camptodromis anastomosantibus, supra tenuibus et conspicuis, subtus elevatis, sub angulo  $70^{\circ}$ - $80^{\circ}$  divergentibus, nervulis utrinque confertim reticulatis; petioli complanati, 8-20 mm. longi. Spica fructifera ad 5 cm. longa, rhachi satis valida, albida, glabrescenti. Cupulae in 3 coalescentes, humiliter cupulares, parte  $1/6$  glandis amplexantes, squamis pluribus appressis imbricatis, late triangularibus, cinereo-tomentosis, apice apiculatis, 5 mm. altae, 12 mm. in diametro. Glandes ovoideae, apice apiculatae, glabrae, nitide stramineae, ad 17 mm. altae, 15 mm. in diametro, cicatrice basilari satis profunde concava, ad 7 mm. in diametro

Southeastern Yunnan: Marlipo, Szetaipo, Loachunshan, alt. 1600-2000 m., in mixed forest, tree 10 m. high, common, *K. M. Feng no. 13716* (type), Nov. 9, 1947; Marlipo, Panchiachu, alt. 1500 m., on roadside, tree 10 m., common, *K. M. Feng no. 12655*, Oct. 31, 1947; Wenshan Hsien, Loajiunshan, alt. 2200-2400 m., in mixed forest, tree 10 m. high, common, *K. M. Feng no. 11229*, Aug. 13, 1947; same locality, alt. 2300-2400 m., in mixed forest, tree 8 m., common, *K. M. Feng no. 11222*, Aug. 13, 1947.

This species differs from others in the oblong or lanceolate leaves more or less crowded at the apex of the branchlets and in the pale straw-colored ovoid to obovoid nuts with quite small basal scar.

**瘦穗柯 *Pasania ischnostachya* Hu, 新種**

常綠喬木高十五公尺，樹幹直徑三十公分；小枝細瘦，圓筒狀，有條紋，紅褐色，有星狀細茸毛。葉皮紙質，披針形，頂端漸尖，基部不等幾圓形，全緣或近頂處有稀疏小鋸齒，上面亮綠色，無毛，下面有紅褐色星狀細茸毛，長七·五至九公分，闊二·二公分；中脈上面凹陷，下面凸起；側脈十八至十九對，對生或互生，近邊緣處微彎與環結，成  $45^{\circ}$  角，小脈極細，兩面皆可見；葉柄極細，長十至十二公分，有稀疏星狀細茸毛；大蕊花序腋生，長至十六公分，花序軸極細瘦，有稜角，有條紋，有稀疏星狀細茸毛，大蕊花單生皂斗中，外面有星狀細茸毛，長二公厘，花柱二至三個，直立開張，不顯著。

雲南東南部：富寧縣，高八百公尺處，在櫟欒林中，大喬木，高十五公尺，直徑三十公分，偶見；王啓無 89614 號（模式標本）一九四〇年五月二十五日。

此種與他種不同處在其極細瘦的大蕊花序與甚小的花。

***Pasania ischnostachya* Hu, sp. nov.**

Arbor sempervirens, 15 m. alta, trunco 30 cm. in diametro; ramuli graciles, teretes, striati, rufo-brunnei, stellato-tomentellati. Folia chartacea, lanceolata, apice acuminata, basi inaequaliter subrotundata, margine integra vel praeter apicem remote denticulata,



supra nitido-viridia et glabra, subtus rufo-brunneo-stellato-tomentellata, 7.5-9 cm. longa, 2.2 cm. lata; costa media supra impressa, subtus elevata; nervis lateralibus utrinsecus 18-19-jugis, oppositis vel alternatis, ad marginem leviter arcuatis et anastomosantibus, sub angulo  $45^\circ$  divergentibus, nervulis tenuissimis, utrinque conspicuis; petioli graciles, 10-12 mm. longi, stellato-tomentellati. Inflorescentia femines axillaris, ad 16 cm. longa, rhachi gracillima, angulari, striati, sparsim stellato-tomentellati, floribus femineis in involucrio solitaris, extus stellato-tomentellatis, 2 mm. longis, stylis 2-3, erecto-patentibus, obtusiusculis.

Southeastern Yunnan: Fooning Hsien, Jargei, alt. 800 m., in oak woods, large tree 15 m. high, 30 cm. in diam., occasional, C. W. Wang no. 89614 (type), May 25, 1940.

This species differs from others in the very slender rachis of the pistillate inflorescence and very small flowers.

### 長果柯 *Pasania longinix* Hu, 新種

常綠喬木高達二十公尺；小枝頗細瘦，有槽，幾無毛，草黃色，有多數高起圓形皮孔。葉皮紙質，倒卵披針形至披針形，頂端長漸尖，基部窄楔形，全緣向外微卷，兩面淡綠色，除中脈有細茸毛外幾無毛；中脈上面微凸起，下面顯著，有微毛；側脈十二至十三對，互生或對生，上面微凹，下面凸起，近邊緣處弓彎與環結，成  $45^\circ$  至  $60^\circ$  角；小脈細，成網狀；葉柄扁平，長一·五公分，有細茸毛。穗狀果序長十公分，果序梗與果序軸頗粗壯，草黃色，有細茸毛，上生多數高起皮孔。皂斗三個連生，有短梗，淺杯狀，包圍長橢果的基部，高七公分，直徑十七公分，苞片多數，緊貼，闊三角形，頂端尖，有灰色茸毛。橢果三角卵矩圓狀，頂端尖，無毛，光亮淺栗褐色，長三·五公分，直徑二三公分；基部疤痕凹入，直徑一公分，內部有不完全隔膜，有細茸毛；種子卵矩圓狀，頂端有尖，多裂。

雲南東南部：麻栗坡，高一千二百至一千五百公尺處，生雜木林中，喬木高二十公尺，稀見，馮國楮 13012 號（模式標本），一九四七年十一月九日。

此特異種與他種異者在三角卵矩圓狀的橢果長至三·五公分有凹深而小的基部疤痕，內部不完全分室與種子多裂狀。

### *Pasania longinix* Hu, sp. nov.

Arbor sempervirens, ad 20 m. alta; ramuli satis graciles, canaliculati, glabrescentes, straminei, lenticellis pluribus elevatis rotundi instructi. Folia chartacea, obovato-lanceolata ad lanceolata, apice longe acuminata, basi anguste cuneata, margine integra et leviter revoluta, utrinque pallide viridia, costa media tomentellata excepta glabrescentia, 14-18 cm. longa, 3.5-6 cm. lata; costa media supra leviter elevata, subtus sparsim piloso prominente; nervis lateralibus utrinsecus 12-13-jugis, alternatis vel suboppositis, supra impressis, subtus elevatis, praeter marginem camptodromis et anastomosantibus, sub angulo  $45^\circ$ - $60^\circ$  divergentibus; nervulis tenuibus, utrinque reticulatis; petioli complanati, 1.5 cm. longi, tomentellati. Spica fructifera 10 cm. longa, pedunculo rhachique satis validis, straminei, tomentellati, lenticellis pluribus elevatis instructis. Cupulae in fasciculum 3 connatae, breviter stipitatae, cupulares, basin glandis longae amplectentes, 7 mm. altae, 17 mm. in diametro, squamis pluribus appressis late triangularibus apiculatis cinereo-tomentosis. Glandes trigono-ovoideo-oblongae, apiculatae, glabrae, nitide leviter castaneo-brunneae, 3.5 cm. longae, 2.3 cm. in diametro; cicatrice basilari concava, 1 cm.

in diametro, intus imperfecte septatae et tomentellatae; semina ovoideo-oblonga, apiculata, pluri-lobata.

Southeastern Yunnan: Marlipo, Hwangjinyin, alt. 1200-1500 m., in mixed forests, tree 20 m. high, rare, *K. M. Feng no. 13012* (type), Nov. 9, 1947.

This striking species differs from others in the trigonous-ovoid-oblong nuts to 3.5 cm. long with deeply concave small basal scar, and incompletely septate inside; and in the many-lobed seeds.

### 俞氏柯 *Pasania Yui* Hu, 新種

常綠喬木高八至十公尺，小枝粗壯，圓柱形，有槽，有灰色茸毛，灰黑色。芽卵狀，頂端尖，鱗片多數，覆瓦狀排列，卵圓披針形，漸尖，有茸毛。葉革質，披針形，頂端漸尖，基部楔形，全緣向外微卷，上面無毛，帶白霜，下面有稀疏毛，帶白霜，長九至十二公分，闊二至三·五公分；中脈上面微凸起，下面顯著；側脈十二至十三對，沿邊緣弓彎與環結，成  $45^\circ$  角；葉柄扁平，長十至十五分，微有疏毛，大蕊柔荑花序長二十公分；大蕊花三個連生，無柄，苞片密生茸毛；花單生，花柱二至三個，開張。穗狀果序長十一公分，果序梗與果序軸粗壯，有稀疏毛。皂斗無柄，扁球狀，將槲果全部包圍，高一·五公分，直徑二公分，壁薄，苞片密集覆瓦狀排列，窄三角形，頂端漸尖，下部有疣狀突起。槲果扁球形，頂端扁平，無毛，亮栗褐色，較皂斗稍小，基部疤痕凹入，直徑一公分。

雲南西南部：緬寧縣，莽洞山，高二千公尺處，生森林中，喬木高八至十公尺，俞德淩 19813 號（模式標本）一九三八年九月三十日。

此種與 *P. trachycarpa* Hickett et A. Camus 相近，不同處在其較大扁球狀皂斗具有更顯著密貼的苞片，與較大的扁球狀槲果。

### *Pasania Yui* Hu, sp. nov.

Arbor sempervirens, 8-10 m. alta; ramuli robusti, teretes, canaliculati, cinereo-tomentosi, grisello-nigri, Gemmae ovoideae, acutae, perulis pluribus imbricatis ovato-lanceolatis acuminatis tomentosis cinctae. Folia coriacea, lanceolata, apice acuminata, basi cuneata, margine integra et leviter revoluta, supra glabra et glaucescentia, subtus sparsim pilosa et glaucescentia, 9-12 cm. longa, 2-3.5 cm. lata; costa media supra leviter elevata, subtus prominente; nervis lateralibus utrinsecus 12-13-jugis, ad marginem camptodromis et anastomosantibus, sub angulo  $45^\circ$  divergentibus; petioli complanati, 10-15 mm. longi, sparsim pilosi. Amenta pistillata 20 cm. longa; flores in 3 connati, sessiles, bracteis dense tomentosis; flores solitarii, stylis 2-3, divergentibus. Spica fructifera 11 cm. longa, pedunculo rhachique validis, sparsim pilosis. Cupulae sessiles, depresso-globosae, glandem tantam omnino amplexantes, 1.5 cm. altae, 2 cm. in diametro, muro tenui, squamis conferim imbricatis, anguste triangularibus, acuminata, parte inferiore tuberculata. Glans depresso-globosa, apice depressa, glaber, nitide castaneo-brunnea, cupulla paullo minor, cicatrice concava, 1 cm. in diametro.

Southwestern Yunnan: Mianning Hsien, Montungshan, alt. 2000 m., in forests, tree 8-10 m., *T. T. Yü, no. 17813* (type), Sept. 30, 1938.

This species is closely allied to *P. trachycarpa* Hickett and A. Camus, differing in the much larger depressed-globose cupules with more pronounced appressed bracts and in the much larger depressed-globose nuts.

### 文山栲 *Pasania wenshanensis* Hu, 新種

常綠喬木高七公尺；小枝細瘦，圓筒狀，無毛。葉革質，短圓形至橢圓披針形，頂端鑷狀尾狀漸尖，基部楔形，全緣向外微卷，上面亮綠色，無毛，下面有白霜，長十三至十九公分，闊四至七公分；中脈在兩面的凸起；側脈互生至對生，七至八對，在上面微凹，在下面凸起，向邊緣弓彎與環結，成  $30^\circ$  至  $70^\circ$  角；小脈不顯著；葉柄壯，上面有槽，無毛，長至二·五公分。穗狀果序長至九公分，果序梗頗壯，無毛，長至二·五公分。皂斗無柄，每三個連生，一個發達，淺杯狀，包圍槲果的基部，苞片密覆瓦狀排列，闊三角形，有茸毛，槲果扁幾球形，頂端有尖頭，高一公分，闊一·五公分，微有毛至幾無毛；基部疤痕微凹入。

雲南東南部：文山縣，多移樹，高二千二百公尺處，生雜木林中，喬木高七公尺，常見，馮國楣 11342 號（模式標本），一九四七年八月十五日。

此種在雲南東南部雜木林中甚為常見。

### *Pasania wenshanensis* Hu, sp. nov.

Arbor sempervirens, ad 7 m. alta; ramuli graciles, teretes, striati, glabri. Folia coriacea, oblonga ad elliptico-lanceolata; apice falcato-caudato-acuminata, basi cuneata, margine integra et leviter revoluta, supra nitide-viridia, glabra, subtus glauca, 13-19 cm. longa, 4-7 cm. lata; costa media utrinque elevata; nervis lateralibus alternatis vel suboppositis, utrinsecus 7-8-jugis, supra impressis, subtus elevatis, praeter marginem camptodromis anastomosantibus, sub angulo  $30^\circ$ - $70^\circ$  divergentibus; nervulis inconspicuis; petioli validi, supra canaliculati glabri, ad 2.5 cm. longi. Spica fructifera ad 9 cm. longa, pedunculo satis valido glabro, ad 2.5 cm. longo. Cupulae sessiles, 3 in fasciculum connatae, una matura humiliter cupulari basin glandis amplexante, squamis dense imbricatis late triangularibus tomentosis. Glandes depresso-subglobosae, apiculatae, 1 cm. altae, 1.5 cm. latae, leviter pilosae ad glabrescentes, cicatrice basilari leviter concava.

Southeastern Yunnan: Wenshan Hsien, Dou-I-Shuh, alt. 2200 m., in mixed forest, tree 7 m. high, common; K. M. Feng no. 11342 (Type), Aug. 15, 1947.

This tree is commonly found in mixed forest in southeastern Yunnan.

### 杜鵑葉栲 *Pasania rhododendrophylla* Hu, 新種

常綠喬木高至十公尺；小枝粗壯，圓柱形，有條紋，有極疏毛，紫褐色，有多數微小高起圓形白色皮孔。葉革質，短圓形至卵短圓形，頂端短漸尖，基部楔形至幾圓形，下延至葉柄，全緣微向外卷，上面亮綠色，下面淡綠色，兩面均無毛，長九·五至十二公分，闊三至五公分；中脈在兩面均凸起而扁平，中間有槽；側脈十五至十六對，互生至對生，近邊緣處弓彎而環結，成  $60^\circ$  角；小脈細，在兩面成網狀；葉柄壯，上面有槽，無毛，長至二·五公分。穗狀果序長至十公分，果序梗粗壯，有毛，長三公分。皂斗三個連生，密集，無柄，杯狀，高六公厘，直徑一公分；苞片成六帶，覆瓦狀排列，闊三角形，頂端有尖，有茸毛，包圍槲果三分之一。槲果倒卵狀，頂端有尖，亮栗褐色，無毛，長十一公厘，直徑八公厘，基部疤痕小，凹入。

雲南東南部：麻栗坡，老君山，高一千六百至二千公尺處，生雜木林中，喬木高至十公尺，常見，馮國楣 13720 號（模式標本），一九四七年十二月九日。

此種與他種不同處在其短圓形革質葉，與密集的皂斗，每三個連生，而包圍倒卵狀長十一公厘直徑八厘之槲果之三分之一。

***Pasania rhododendrophylla* Hu, sp. nov.**

Arbor sempervirens, 10 m. alta; ramuli robusti, teretes, striati, sparsissime pilosi, purpurino-brunnei, lenticellis pluribus minutis elevatis rotundatis albis instructi. Folia coriacea, oblonga, ovato-oblonga, apice cuspidato-acuminata, basi cuneata ad subrotundata, in petiolum decurrentia, margine integra et leviter revoluta, supra nitido-viridia, subtus pallido-viridia, utrinque glabra, 9.5-12 cm. longa, 3-5 cm. lata; costa media utrinque elevata et complanata; nervis lateralibus utrinsecus 15-16-jugis, alternatis vel oppositis, utrinque elevatis, ad marginem camptodromis et anastomosentibus, sub angulo 60° divergentibus; nervulis tenuibus, utrinque reticulatis; petioli validi, supra canaliculati, glabri, ad 2.5 cm. longi. Amenta fructifera ad 10 cm. longa, pedunculo robusto, piloso, 3 cm. longo. Cupulae 3 in fasciculum connatae, dense confertes, sessiles, cupulares, 6 mm. altae, 1 cm. in diametro, squamis in zonas 6 imbricatis, late triangularibus, apiculatis, tomentosis, partem 1/3 glandis amplectentes. Glans obovoidea, apiculata, nitide castaneo-brunnea, glabra, 11 mm. longa, 8 mm. in diametro, cicatrice basilari parva, concava.

Southeastern Yunnan: Marlipo, Szetaipo, Loachun Shan, alt. 1600-2000 m., in mixed forest, tree 10 m. high, common, *K. M. Feng no. 13720* (type) Dec. 9th, 1947.

This species differs from others in the oblong coriaceous leaves and densely crowded cupules coalescent in threes, embracing 1/3 of the obovoid nuts 11 mm. long, 8 mm. in diam.

**漿櫟 *Pasania tomentosinux* Hu, 新種**

常綠喬木高八至十公尺；小枝極細瘦，有槽，有細茸毛，紅褐色，葉皮紙質，橢圓披針形至披針形，頂端尾狀漸尖，基部楔形，全緣向外微卷，上面暗綠色微有毛，下面有白霜，微有毛最後幾無毛，長八·五至十四公分，闊二·五至四·五公分；中脈在上面微凸起，在下面顯著；側脈十一至十四對，互生至幾對生，在邊緣弓彎與環結，成 45° 至 60° 角；小脈密集，細，在兩葉均可見；葉柄上面有槽，有細茸毛及稀疏毛，最後無毛，長一至二公分。穗狀果序長至十一公分，果穗梗甚粗壯，長四公分，與果穗軸均有茸毛，有多數高起幾圓形皮孔。皂斗三至五個連生，有短柄，淺杯狀，包圍櫟果四分之一；苞片多數，覆瓦狀排列，連生，闊三角形，漸尖，密生黃色茸毛。櫟果扁球狀，頂端有尖，高至二公分，直徑二·三分，密生黃色茸毛，除頂端外最後幾無毛，栗褐色，基部疤痕直徑十一公分，凹入。

雲南東南部：西嚙縣，香屏山，高一千五百至一千七百公尺處，生水邊雜木林中，常見，馮國楮 11508 號（模式標本），一九四七年八月三十日；西嚙縣，法斗，高一千六百公尺處，生雜木林中，喬木高八公尺，稀見，馮國楮 11596 號，一九四七年九月三日；西嚙縣，高一千五百公尺處，生石山上雜木林中，喬木高十公尺，常見，馮國楮 12103 號，一九四七年九月二十九日。

此種與他種不同處在其密生黃色茸毛的扁球狀櫟果高至二公分最後變種為無毛，下部為淺杯狀皂斗所包，皂斗有多數連生覆瓦狀排列闊三角形有密生黃色茸毛的苞片。

***Pasania tomentosinux* Hu, sp. nov.**

Arbor sempervirens, 8-10 m. alta; ramuli graciles, canaliculati, tomentellati, rufo-brunnei. Folia chartacea, elliptico-lanceolata ad lanceolata, apice caudato-acuminata, basi cuneata, margine integra et leviter revoluta, supra obscure viridia et sparsissime pilosa, subtus glauca et sparse pilosa, demum glabrescentes, 8.5-14 cm. longa, 2.5-4.5 cm. lata; costa media supra leviter elevata, subtus prominente elevata; nervis lateralibus

utrinsecus 11-14-jugis, alternatis vel suboppositis ad marginem camptodromis et anastomosantibus, sub angulo  $45^{\circ}$ - $60^{\circ}$  divergentibus; nervulis confertis tenuibus utrinque conspicuis; petioli supra canaliculati, tomentellati et sparsim pilosi, demum glabri, 1-2 cm. longi. Amenta fructifera ad 11 cm. longa, pedunculo pervalido, 4 cm. longo, ut rhachis tomentosi, lenticellis pluribus elevatis, sub-rotundatis instructo. Cupulae 3-5 in fasciculum connatae breviter stipitatae, humiliter cupulares, partem circiter  $1/4$  glandis amplectentes, squamis pluribus imbricatis coalescentibus late triangularibus acuminatis dense fulvo-tomentosis. Glandes depressae, globosae, apiculatae, ad 2 cm. altae, 2.3 cm. in diametro, dense fulvo-tomentosae, apice excepto demum glabrescentes, castaneo-brunneae, cicatrice basilari 11 mm. in diametro, concava.

Southeastern Yunnan: Sichour Hsien, Shiangpyng Shan, alt. 1500-1700 m., in mixed forest by stream, common, *K. M. Feng no. 11508* (type), Aug. 30, 1947; Sichour Hsien, Shiangpyng Shan, alt. 1600 m., in mixed forest, tree 8 m., rare, *K. M. Feng no. 11596*, Sept. 3, 1947; Sichour Hsien, Faadou, alt. 1500 m., in mixed forest on rocky hill, tree 10 m. high, common, *K. M. Feng no. 12103*, Sept. 29, 1947.

This species differs from others in the densely tawny-tomentose depressed-globose nuts to 2 cm. high finally glabrous, embraced at the lower quarter by the shallowly cupular cupules with many imbricate coalescent broadly triangular densely tawny-tomentose bracts.

#### 亮果柯 *Pasania nitidinix* Hu, 新種

常綠喬木高八公尺。葉革質，披針形至鐮形披針形，頂端長漸尖，基部楔形，全緣向外微卷，上面暗綠色無毛，下面帶白霜，有極稀毛，長七至十三公分，闊二至三公分；中脈在兩面均凸起，側脈十至十一對，互生至幾對生，近邊緣處弓彎與環結，成  $45^{\circ}$  角；小脈在兩面均可見；葉柄扁平，在上面基部微有槽，無毛。穗狀果序長十一公分，果序梗甚粗壯，長三·五公分，與果序軸均有稀疏毛，上有多數高起橢圓形皮孔。皂斗三個連生，有短柄，淺杯狀，包圍櫟果約四分之一；苞片多數，覆瓦狀，連生，闊三角形，頂端漸尖，密生灰色茸毛，櫟果扁平不規則球狀，至三角亞球狀，頂有尖，高至一·四公分，闊二·五公分，無毛，亮草黃色，基部疤痕不規則亞圓形，短圓形至亞三角形，闊至十三公分，凹入。

雲南東南部：西嘯縣，法斗，高一千五百公尺處，在石山上雜木林中，樹高三十英尺，常見，馮國楹 12103 號（模式標本），一九四七年九月二十九日。

此種似與漿櫟的皂斗與櫟果相近似，不同處在其披針形葉與無毛櫟果。

#### *Pasania nitidinix* Hu, sp. nov.

Arbor sempervirens, ad 8 m. alta. Folia coriacea, lanceolata vel falcato-lanceolata, longe acuminata, basi cuneata, margine integra et leviter revoluta, supra obscure viridia et glabra, subtus glaucescentes et sparsissime pilosa, 7-13 cm. longa, 2-3 cm. lata; costa media utrinque elevata; nervis lateralibus 10-11-jugis, alternatis vel suboppositis, ad marginem camptodromis et anastomosantibus, sub angulo  $45^{\circ}$  divergentibus, nervulis utrinque conspicuis; petioli complanati, supra basi leviter canaliculata, glabri. Amenta fructifera 11 cm. longa, pedunculo pervalidi, 3.5 cm. longo, ut rhachis sparsim pilosi lenticellis pluribus elevatis ellipticis instructo. Cupulae 3 in fasciculum connatae, breviter stipitatae, humiliter cupulares, partem circiter  $1/4$  glandis amplectentes, squamis pluribus

imbricatis coalescentibus, late triangularibus, acuminatis, dense cinereo-tomentosis. Glandes depressae irregulariter globosae vel trigonoso-subglobosae, apiculatae, ad 1.4 cm. altae, ad 2.5 cm. latae, glabrae, nitide stramineae, cicatrice basilari irregulariter subrotundati, oblongi vel subtriangulari, ad 1.3 cm. lati, concava.

Southeastern Yunnan: Sichour Hsien, Faadoou, alt. 1500 m., in mixed forests on rocky hill, tree 30 ft., common, K. M. Feng, no. 12103 (type), Sept. 29th, 1947.

This species seems to be related to *P. tomentosinux* Hu in the form of cupules and nuts, differing in lanceolate leaves and glabrous nuts.

### 仇栗樹 *Pasania yenshanensis* Hu, 新種

常綠喬木高至十公尺；小枝圓柱形，有槽，有黃色茸毛，有多數微小圓形皮孔，葉革質，橢圓披針形，頂端尾狀漸尖，基部楔形，全緣向外微卷，兩面均有星狀細茸毛，長七至十公分，闊二至三公分；中脈在上面微凸起，在下面顯著；側脈十二對，上面可見，下面凸起，成  $60^\circ$  角；葉柄扁平，長六至八公分，有茸毛。穗狀果序長六公分，果序梗與果序軸粗壯，有茸毛。皂斗三五個連生，有柄，成熟時陀螺狀，頂端扁平，除頂端外將櫟果全部包圍，高十四公分，直徑十七公分，壁薄，有茸毛，苞片覆瓦狀排列，窄三角形，漸尖，在頂端下開張，櫟果幾球形，頂端微扁，有尖頭，淺綠褐色，無毛，較皂斗稍小，基部疤痕大，凸起，大約全果五分之二。

雲南東南部：硯山縣，高約一千二百公尺處，生有樹木的山坡上，喬木高十公尺，果可食，王啓無 84125 號（模式標本），一九三九年十月二日；文山縣，黃草壩，高一千六百公尺處，生開展叢薄中，小喬木高二·五公尺，常見，馮國楮 11332 號，一九四七年八月十七日；文山縣，高二千二百公尺處，生雜木林中，喬木高七公尺，常見，馮國楮 11332 號，一九四七年八月十七日；西嚮縣，高一千五百至一千七百公尺處，生雜木林中，喬木高七公尺，常見，馮國楮 11581 號，一九四七年九月九日；雲南西北部：中甸縣，金沙江邊，高二千三百至二千五百公尺處，生水邊有樹木的山谷中，喬木高十公尺，馮國楮 3206 號，一九三九年十一月三日。

此種與 *P. dealbata* Oerst. 相近似，不同處在其有短柄陀螺狀的皂斗被有窄三角形的苞片開張或向內微彎。

### *Pasania yenshanensis* Hu, sp. nov.

Arbor sempervirens, 10 m. alta; ramuli teretes, canaliculati, fulvo-tomentosi, lenticellis pluribus minutis rotundatis instructi. Folia coriacea, elliptico-lanceolata, apice caudato-acuminata, basi cuneata, margine integra et leviter revoluta, utrinque stellato-tomentellata, 7-10 cm. longa, 2-3 cm. lata; costa media supra leviter elevata, subtus prominente; nervis lateralibus utrinsecus circiter 12-jugis, supra conspicuis, subtus elevatis, ad marginem camptodromis et anastomosantibus, sub angulo  $60^\circ$  divergentibus; petioli complanati, 6-8 mm. longi, tomentosi. Spica fructifera 6 cm. longa, pedunculo rhachique validis, tomentosis. Cupulae 3-5 in fasciculum connatae, stipitatae, illis maturis turbinatis apice depressis, apice excepto glandem amplectentes, ad 14 mm. altae, 17 mm. in diametro, muro tenui, tomentoso, squamis imbricatis anguste triangularibus, acuminatis sub partem superiorem expansis. Glans subglobosa, apice leviter depressa et umbonata, pallide viridi-brunnea, glabra, cupula paullo minor, cicatrice magna, convexa, partem  $2/5$  glandis aequanti.

Southeastern Yunnan: Yenshan Hsien, Chukoushan, alt. 1200 m., on wooded slope, tree 10 m., nuts edible, C. W. Wang no. 84125 (type), Oct. 2, 1939; Wenchan Hsien,

Hwangtsaobah, alt. 1600 m., in open thickets, small tree 2.5 m., common, *K. M. Feng no. 11007*, Aug. 1947; Wenshan Hsien, Maaluhtang, alt. 2200 m., in mixed forest, tree 7 m., common, *K. M. Feng no. 11332*, Aug. 17, 1947; Sichour Hsien, Shiangypng Shan, alt. 1500-1700 m., in mixed forest, tree 7 m. high, common, *K. M. Feng no. 11581*, Sept. 9, 1947; Northwestern Yunnan: Chuntien, Tali on Yangtze bank, alt. 2300-2500 m. by stream, in wooded valley, tree 10 m., *K. M. Feng no. 3206*, Nov. 3, 1939.

This species is closely allied to *P. dealbata* Oerst., differing in the shortly stipitate cupules with narrowly triangular acuminate bracts spreading or slightly incurved at apex.

### 疎穗柯 *Pasania lysistachya* Hu, 新種

喬木高達八公尺；小枝細瘦，圓柱狀，有槽，橙紅色，有灰色細星狀茸毛。葉薄革質，披針形，頂端鐮狀尾狀漸尖，基部楔形至幾圓形，下延，上面亮綠色，無毛，下面帶白霜，幾無毛，長十一至十二·五公分，闊二·五至三公分；中脈在兩面皆凸起；側脈九至十對，互生至幾對生，在下面凸起，近邊緣處弓彎與環結，成  $45^\circ$  至  $60^\circ$  角；葉柄細瘦，扁平，長一·五至二公分，無毛。穗狀果序長十三·五公分，果序梗與果序軸頗細，圓柱形，有槽，有灰色星狀細茸毛。皂斗疏生，每三個連生，一個發育，無柄，淺杯狀，包圍櫟果三分之一，高五公厘，直徑九厘，苞片密貼，覆瓦狀排列，闊三角形，頂端尖，有灰色茸毛，櫟果圓錐狀亞球形，有尖頭，亮栗褐色，幾無毛，高一公分，直徑一公分，基部疤痕扁平直徑五公厘。

雲南東南部：西嚨縣，高一千至一千三百公尺處，生雜木林中，喬木高三十英尺，常見，馮國楨 12533 號（模式標本），一九四七年十月十六日。

此種與他種不同處在其稀疏的穗狀果序及其圓錐狀幾球形的櫟果直徑一公分。

### *Pasania lysistachya* Hu, sp. nov.

Arbor ad 8 m. alta; ramuli tenues, teretes, striati, aurantio-rubri, cinereo-stellato-tomentellati. Folia tenue coriacea, lanceolata, apice falcato-caudato-acuminata, basi cuneata vel subrotundata, decurrentia, supra nitide viridia, glabra, subtus glaucescentes, glabrescentes, 11-12.5 cm. longa, 2.5-3 cm. lata; costa media utrinque elevata; nervis lateralibus utrinsecus 9-11-jugis, alternatis vel suboppositis, subtus elevatis, ad marginem camptodromis et anastomosantibus, sub angulo  $45^\circ$ - $60^\circ$  divergentibus; petioli graciles, plani, 1.5-2 cm. longi, glabri. Amenta fructifera 13.5 cm. longa, pedunculo rhachique satis graciles, teretes, striati, cinereo-stellato-tomentellati. Cupulae laxae instructi, 3-aggregatae, unus adultus, sessiles, humiliter cupulares, partem  $1/3$  glandis amplectentes, 5 mm. alti, 9 mm. in diam., squamis numerosis, dense imbricatis, late triangulares, acutis, cinereo-tomentosi; glans conico-subglobosa, apiculata, nitide castaneo-brunnea, glabrescentis, 1 cm. alta, 1 cm. in diam., basi cicastrice plana, 5 mm. in diam.

Southeastern Yunnan: Sichour Hsien, Ping-chai, alt. 1000-1300 m., in mixed forest, tree 30 ft., common; *K. M. Feng, no. 12533* (type), Oct. 16th, 1947.

This species differs from others in its loosely arranged fruits on fruiting spike, and in its conico-subglobose nuts 1 cm. in diam.

### \*川石櫟 *Pasania Fangii* Hu et Cheng, 新種

常綠喬木；小枝細瘦，圓柱形，有黃灰色茸毛。葉革質，倒卵形至倒披針形，頂端尾狀漸尖，基部楔形，邊緣微作淺波狀及微向外卷，上面亮綠色，幾無毛，下面微帶白霜，微有扁貼毛，

長八至十公分，闊二·五至三·五公分；中脉在兩面均凸起；側脉九至十對，近邊緣處弓彎與消失，成  $60^\circ$  角；葉柄長八至十公分，有茸毛，小蕊柔荑花序總狀頂生，有灰黃色茸毛，長至六公分。穗狀果序長至九公分，果序梗與果序軸粗壯，有茸毛，果密生。皂斗有短柄，扁球形，包圍果之三分之二，壁薄而脆有灰色茸毛，苞片密覆瓦狀排列，闊三角形，頂端長伸出。榧果闊圓錐形，頂端有尖，亮栗褐色，無毛，高一公分，直徑一·二公分，基部疤痕大，凹入。

四川西部：峨眉山，二峨山，生森林之旁，喬木高七至八公尺，李彩祺 4751 號（模式標本），一九三〇年八月三十日。

此種與俞氏柯相近似，不同處在其較細的側脉與不能見的小脉，與其小而有柄的皂斗不完全包圍其較小的榧果。

**\**Pasania Fangii* Hu et Cheng, sp. nov.**

*Lithocarpus glabra* (Thunb.) Nakai var. *szechuanica* Fang in Icon. Plant. Omeien. 21: pl. 120 (1945).

Arbor sempervirens; ramuli graciles, teretes, fulvo-cinereo-tomentosi. Folia coriacea, obovata ad oblanceolata, apice caudato-acuminata, basi cuneata, margine leviter undulata et leviter revoluta, supra nitido-viridia et glabrescentia, subtus glaucescentia et sparsim strigosa, 8-10 cm. longa, 2.5-3.5 cm. lata; costa media utrinque elevata; nervis lateralibus utrinsecus 9-10-jugis, ad marginem camptodromis et vanescentibus, sub angulo  $60^\circ$  divergentibus; petioli 7-8 mm. longi, tomentosi. Amenta staminata racemosa, terminalia, fulvo-cinereo-tomentosa, ad 6 cm. longa. Amenta fructifera 9 cm. longa, pedunculo rhachique validis, tomentosis, fructibus dense-confertis, Cupulae breviter stipitatae, depresso-globosae, partem  $2/3$  glandis amplexantes, muro tenui, fragili, cinereo-tomentoso, squamis confertim imbricatis late triangularibus apice longe productis. Glans late conica, apice apiculata, nitide castaneo-brunnea, glabra, 1 cm. alta, 1.2 cm. in diametro, cicatrice basilari magna, concava.

Western Szechuan: Mount Omei, at the side of forest, tree 7-8 m. high, T. C. Lee no. 4751 (type), Aug. 30, 1930.

This species is allied to *P. Yui* Hu, differing in leaves with more slender lateral veins and invisible veinlets, and in small stipitate cupules not completely enclosing the smaller nuts.